



General Purpose Motion Control Couplings

- Sliding Disc (Oldham)
- Universal Lateral (Uni-Lat)
 - Backlash-free up to 10° turns
 - Can tolerate large misalignments
 - Slight damping characteristics
 - Flex-free mechanical action - non-progressive bearing loads
 - Non-magnetic (with special screws)
 - Electrically isolating
 - Low inertia

Uni-Lats are widely used for pulse generator drives while Oldhams are very popular for stepper driven positioning stages.

A unique property of Uni-Lats is resistance to axial motion. This makes them suitable for light push/pull duties and for anchoring axially unrestricted shafts.

Oldhams are 3-part couplings consisting of 2 hubs + 1 torque disc. The hubs determine the method of installation and shaft attachment, the discs determine the quality of motion.

The 4 hub styles and 2 disc materials that comprise the range are fully interchangeable within each of the 9 sizes available. To take advantage of this flexibility, hubs and discs are specified and supplied separately.

The discs are the sacrificial elements and are replaceable at low cost in the event of wear or breakage.



Lateral Offset Couplings



General Performance Criteria

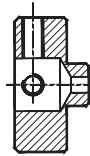
Temperature Range

-20°F to +140°F (-20°C to +60°C)

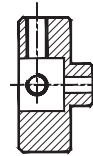
Maximum Rotational Speed

3000 rev/min

- ① **Blind hubs:** Length of parallel bore ± 0.2 . Bores may terminate in 118° incl. angle or flat bottomed.
Thro' hubs: Max permissible hub penetration.



118° Included Angle



Flat Bottomed

What's New?

Based on requests we have extended our ranges of Thro' hubs.

Aluminium range now includes a size 13 Set Screw version.

Stainless Steel range has also been extended to include a size 13 and 19 hub

What's Changed?

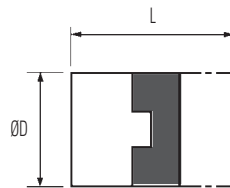
Size 19 Aluminium Clamp Hubs we have introduced a metric version replacing the especial 4-40 UNC screw. [Old product reference 235.19]

Size 33, we have dropped the old long tenon version from the catalog, this will still be available to special order.

[Old product references 230.33.00/243.33/245.33/236.33/454H33 & 456H33]

- ② **Blind hubs:** Nominal distance between unchamfered shafts bottomed out to L1.
Thro' hubs: Nominal distance between shafts with standard (unbored) disc.
- ③ Maximum recommended tightening torque.
- ④ Values apply to complete couplings with max bores.
- ⑤ **Peak torque.** Select a size where Peak Torque exceeds the application torque x service factor.
- ⑥ Couplings can provide up to ($\text{ØD} \times 0.1$) radial compensation in extreme cases.
 Observe given values for maximum backlash-free life.
 Axial compensation is set on installation.
 Electrical isolation between shafts > 3kV.
- ⑦ Values apply at 50% peak torque with no misalignment, measured shaft-to-shaft with largest standard bores.
- ⑧ Thro' hubs can be provided with keyways.

Blank hubs



User-adaptable for special needs, e.g. fitting within tubes. Blank hubs are supplied centred with no provision for fastening. External dimensions identical with blind hubs.

Coupling size	Complete hub ref.	ØD	L
06	231.06.00	0.25 (6.4)	0.50 (12.7)
09	231.09.00	0.37 (9.5)	0.50 (12.7)
13	231.13.00	0.50 (12.7)	0.63 (15.9)
19	231.19.00	0.75 (19.1)	0.87 (22.0)
25	231.25.00	1.00 (25.4)	1.12 (28.4)
33	231.33.00	1.31 (33.3)	1.65 (42.0)
41	231.41.00	1.63 (41.3)	2.00 (50.8)

Standard discs (larger sizes are webbed)



Acetal – High torsional stiffness, good bearing properties, long backlash-free life.

Nylon 11 – Resilient, isolates noise & vibration. Performance approximately 25% that of acetal disc.

Thro' bored discs

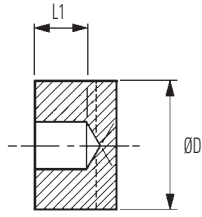


Thro' bored discs allow shafts to near-butt, standard thro' hole diameter = $\text{ØD} \times 0.5$. To order, add suffix 'T' to order code, eg. **236.25T**

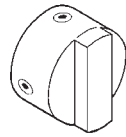
Other thro' hole diameters are manufactured to order. Specify the disc ref. and thro' hole diameter. This should equal the larger shaft diameter + 2 x max radial error.

Note that thro' bored discs reduce torsional stiffness.

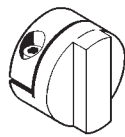
Brass / Aluminium Blind Hubs



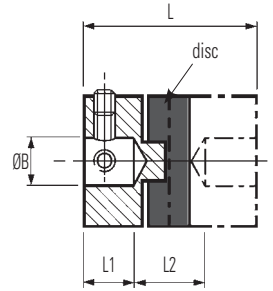
Controlled bore depth L1 provides a register when pre-assembling hubs to shafts



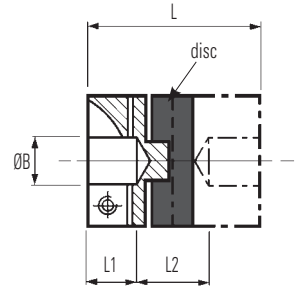
Set screw style



Clamp style



Refs. 232
Set screw style



Refs. 234
Clamp style

DIMENSIONS & ORDER CODES

Coupling Type and Size	Hub Ref		Dimensions								Fasteners			Disc Ref	
	Set Screw Style	Clamp Style	ØD in. (mm)	L in. (mm)	① L1 in. (mm)	② L2 in. (mm)	ØB1 Max in. (mm)	④ Moment of Inertia kgm ² x10 ⁻⁸	④ Mass kg x10 ⁻³	Size	③ Torque lb.-in (Nm)	Wrench in. (mm)	Acetal (black) Std.	Nylon 11 (Natural)	
Blind Hubs	06	232.06	-	.25 (6.4)	0.5 (12.7)	0.15 (3.8)	0.20 (5.1)	0.13 (3.18)	6	2.5	M3	8.32 (0.94)	0.06 (1.5)	236.06	238.06
	09	232.09	-	.37 (9.50)	0.5 (12.7)	0.15 (3.8)	0.20 (5.1)	0.20 (5)	18	4	M3	8.32 (0.94)	0.06 (1.5)	236.09	238.09
	13	232.13	-	0.5 (12.7)	0.63 (15.9)	0.17 (4.3)	0.29 (7.3)	0.25 (6.35)	26	11	M3	8.32 (0.94)	0.06 (1.5)	236.13	238.13
	19	232.19	-	.75 (19.1)	0.87 (22.0)	0.25 (6.3)	0.37 (9.4)	0.31 (8)	67	12	M3	8.32 (0.94)	0.06 (1.5)	236.19	238.19
		-	234.19								M2.5	11.6 (1.32)	0.08 (2.0)		
	25	232.25	-	1.0 (25.4)	.98 (28.4)	0.34 (8.6)	0.44 (11.2)	0.47 (12)	252	31	M4	20.1 (2.27)	0.08 (2.0)	236.25	238.25
		-	234.25								M3	21.5 (2.43)	0.10 (2.5)		
	33	232.33	-	1.31 (3.3)	1.65 (42.0)	0.51 (13.0)	0.63 (16.0)	0.63 (16)	1074	72	M5	40.9 (4.62)	0.06 (1.5)	836.33	838.33
	-	234.33								M4	20.6 (2.33)	0.08 (2.0)			
41	232.41	-	1.62 (41.3)	2.0 (50.8)	0.66 (16.7)	0.69 (17.4)	0.79 (20)	3327	148	M5	40.1 (4.62)	0.10 (2.5)	236.41	238.41	
	-	234.41								M4	50.1 (5.66)	0.12 (3.0)			

PERFORMANCE (AT 20°C WITH STANDARD ACETAL DISC)

Coupling Size	⑤ Peak torque lbs.-in. (Nm)	⑥ Max compensation @ 3000 rpm			⑦ Torsional		Static break torque lbs.-in. (Nm)
		Angular deg	Radial in. (mm)	Axial in. (± mm)	Rate deg / Nm	Stiffness Nm / rad	
06	0.53 (0.06)	0.5	.004 (0.1)	.002 (0.05)	5.7	10	6.2 (0.7)
09	1.90n (0.21)		.004 (0.1)	.002 (0.05)	1.9	30	17.8 (2)
13	4.43 (0.5)		.004 (0.1)	.002 (0.05)	0.88	65	35.4 (4)
19	15.0 (1.7)		.008 (0.2)	.004 (0.1)	0.50	115	70.1 (8)
25	35.4 (4)		.008 (0.2)	.004 (0.1)	0.28	205	115 (13)
33	79.7 (9)		.008 (0.2)	.006 (0.15)	0.093	615	469 (53)
41	151 (17)		.01 (0.25)	.006 (0.15)	0.048	1200	504 (57)

Materials & Finishes

Hubs sizes 06 to 13 : Brass BS 2874 CZ121

Hubs sizes 19 to 41: Al Alloy 2014 16

Fasteners: Alloy steel, black oiled

Blind & black hubs: Irridite NCP finish

IMPORTANT

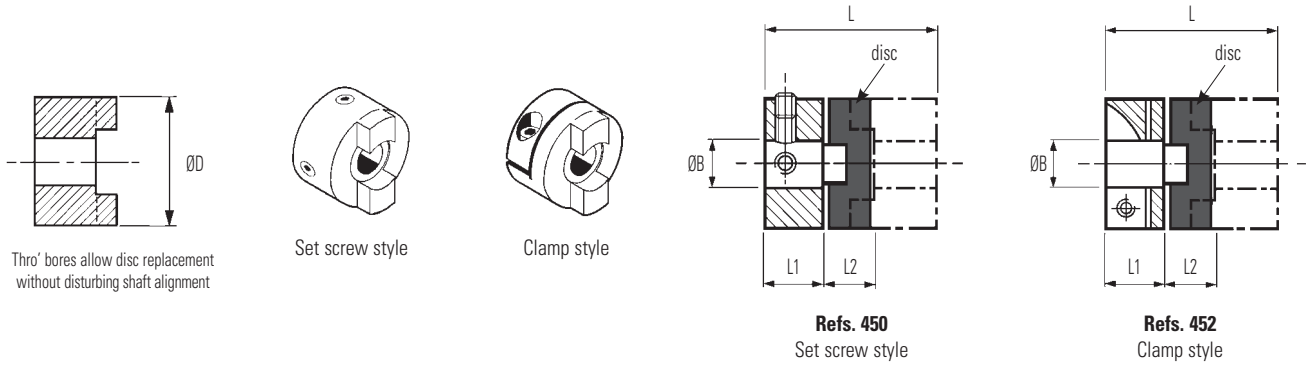
Load capacity depends on application conditions:
see page 4 for details

STANDARD BORES FOR ALL TYPES

Sizes indicated in parenthesis are metric (mm).

Coupling Size	ØB1, ØB2 +0.0012/ -0 (+0.03mm/-0mm)																								
	(2)	(3)	1/8"	(4)	3/16"	(5)	(6)	1/4"	(8)	3/8"	(10)	(12)	1/2"	(14)	(15)	5/8"	(16)	(18)	(19)	3/4"	(20)	(24)	(25)	(30)	
06	•	•	•																						
09		•	•	•	•	•																			
13		•	•	•	•	•	•																		
19				•	•	•	•	•																	
25						•	•	•	•	•	•	•													
33									•	•	•	•	•	•	•	•	•								
41										•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Bore ref.	11	14	16	18	19	20	22	24	28	31	32	35	36	38	40	41	42	45	46	47	48	51	52	56	

Aluminium Thro' Hubs



DIMENSIONS & ORDER CODES

Coupling Type and Size	Hub Ref		Dimensions								Fasteners			Disc Ref	
	Set Screw Style	Clamp Style	ØD in. (mm)	L in. (mm)	① L1 in. (mm)	② L2 in. (mm)	ØB1 Max in. (mm)	④ Moment of Inertia kgm ² x10 ⁻⁸	④ Mass kg x10 ⁻³	Size	③ Torque lb.-in (Nm)	Wrench in. (mm)	Acetal (black) Std.	Nylon 11 (Natural)	
Thro' Hubs	13	450H13	-	0.5 (12.7)	0.63 (15.9)	0.21 (5.5)	0.08 (1.7)	0.25 (6.35)	20	10	M3	8.32 (0.94)	0.06 (1.5)	236.13	238.13
	19	450H19	-	.75 (19.1)	1.02 (26.0)	0.37 (9.4)	0.28 (7.2)	0.31 (8)	59	13	M5	40.1 (4.62)	0.10 (2.5)	236.19	238.19
		-	452H19	-							M2.5	11.6 (1.32)	0.08 (2.0)		
	25	450H25	-	1.0 (25.4)	1.28 (32.4)	0.46 (11.6)	0.36 (9.2)	0.47 (12)	252	31	M5	40.9 (4.62)	0.10 (2.5)	236.25	238.25
		-	452H25	-							M3	21.5 (2.43)	0.10 (2.5)		
	33	450H33	-	1.31 (33.3)	1.65 (42.0)	0.59 (15.0)	0.47 (12.0)	0.63 (16)	1080	67	M6	67.4 (7.61)	0.12 (3.0)	836.33	838.33
		-	452H33	-							M4	50.1 (5.66)	0.12 (3.0)		
	41	450H41	-	1.62 (41.3)	2.0 (50.8)	0.70 (17.8)	0.60 (15.3)	0.79 (20)	3177	142	M6	67.4 (7.61)	0.12 (3.0)	236.41	238.41
		-	452H41	-							M4	50.1 (5.66)	0.12 (3.0)		
50	450H50	-	1.97 (50.0)	2.35 (59.6)	0.81 (20.6)	0.72 (18.4)	1.0 (25.4)	7550	208	M8	162 (18.36)	0.16 (4.0)	236.50	-	
	-	452H50	-							M5	101 (11.40)	0.16 (4.0)			
57	450H57	-	2.25 (57.1)	3.07 (78.0)	1.12 (28.4)	0.83 (21.2)	1.18 (30)	12410	361	M8	162 (18.36)	0.16 (4.0)	236.57	-	
	-	452H57	-							M6	171 (19.34)	0.20 (5.0)			

PERFORMANCE (AT 20°C WITH STANDARD ACETAL DISC)

Coupling Size	⑤ Peak torque lbs.-in. (Nm)	⑥ Max compensation @ 3000 rpm			⑦ Torsional		Static break torque lbs.-in. (Nm)
		Angular deg	Radial in. (mm)	Axial in. (± mm)	Rate deg / Nm	Stiffness Nm / rad	
13	4.43 (0.5)	0.5	.004 (0.1)	.002 (0.05)	0.88	65	35.4 (4)
19	15.0 (1.7)		.008 (0.2)	.004 (0.1)	0.50	115	70.1 (8)
25	35.4 (4)		.008 (0.2)	.004 (0.1)	0.28	205	115 (13)
33	79.7 (9)		.008 (0.2)	.006 (0.15)	0.093	615	469 (53)
41	151 (17)		.01 (0.25)	.006 (0.15)	0.048	1200	504 (57)
50	266 (30)		.01 (0.25)	.008 (0.2)	0.042	1375	841 (95)
57	389 (44)		.01 (0.25)	.008 (0.2)	0.022	2610	1328 (150)

Materials Finishes

- Hub sizes 13 to 57 :** Al Alloy 2014A 16
- Fasteners:** Alloy steel, black oiled
- Hubs:** Clear anodised finish

IMPORTANT

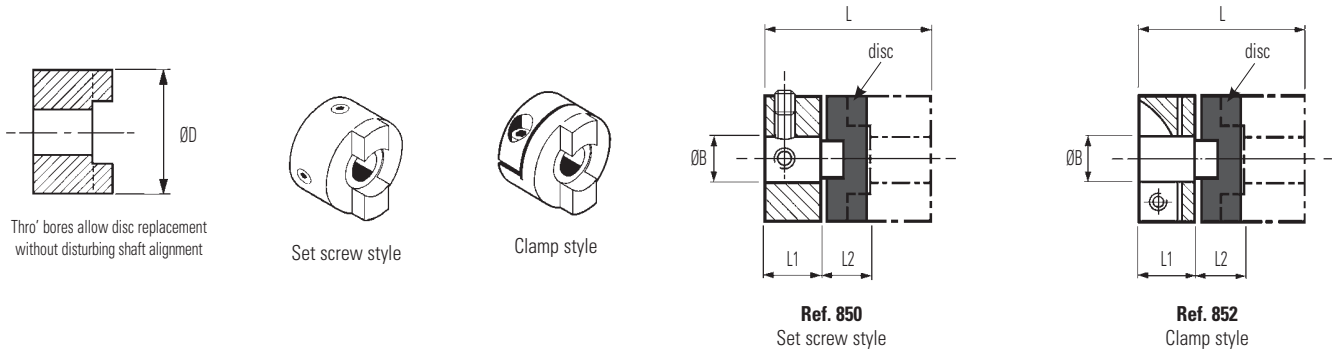
Load capacity depends on application conditions:
see page 4 for details

STANDARD BORES® FOR ALL TYPES

Sizes indicated in parenthesis are metric (mm).

Coupling Size	ØB1, ØB2 +0.0012/ -0 (+0.03mm/-0mm)																								
	(2)	(3)	1/8"	(4)	3/16"	(5)	(6)	1/4"	(8)	3/8"	(10)	(12)	1/2"	(14)	(15)	5/8"	(16)	(18)	(19)	3/4"	(20)	(24)	(25)	(30)	
13		•	•	•	•	•	•	•																	
19				•	•	•	•	•																	
25						•	•	•																	
33							•	•																	
41									•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
50										•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
57											•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Bore ref.	11	14	16	18	19	20	22	24	28	31	32	35	36	38	40	41	42	45	46	47	48	51	52	56	

Stainless Steel Thro' Hubs



DIMENSIONS & ORDER CODES

Size	Hub Ref		Dimensions							Fasteners			Disc Ref	
	Set Screw Style	Clamp Style	ØD in. (mm)	L in. (mm)	L1 in. (mm)	L2 in. (mm)	ØB1 Max in. (mm)	Moment of Inertia kgm ² x10 ⁻⁸	Mass kg x10 ⁻³	Size	Torque lbs.-in. (Nm)	A/F in. (mm)	Acetal (black) Std.	Nylon 11 (Nat)
13	850.13	-	0.5 (12.7)	0.63 (15.9)	0.21 (5.5)	0.08 (1.7)	0.25 (6.35)	26	14	M3	2.83 (0.32)	0.06 (1.5)	236.13	238.13
19	850.19	-	0.75 (19.1)	1.02 (26.0)	0.37 (9.4)	0.28 (7.2)	0.31 (8.0)	220	45	M4	9.3 (1.05)	0.08 (2.0)	236.19	238.19
	-	852.19								M2.5	6.0 (0.68)	0.08 (2.0)		
25	850.25	-	1.0 (25.4)	1.28 (32.4)	0.46 (11.6)	0.36 (9.2)	0.47 (12.0)	587	76	M5	18.6 (2.1)	0.10 (2.5)	236.25	238.25
	-	852.25								M3	10.6 (1.2)	0.10 (2.5)		
33	850.33	-	1.31 (33.3)	1.65 (42.0)	0.60 (15.0)	0.36 (12.0)	0.63 (16.0)	2091	165	M6	33.6 (3.8)	0.12 (3.0)	836.33	838.33
	-	852.33								M4	25.7 (2.9)	0.12 (3.0)		
41	850.41	-	1.63 (41.3)	2.0 (50.8)	0.70 (17.8)	0.6 (15.3)	0.79 (20.0)	6822	305	M6	33.6 (3.8)	0.12 (3.0)	236.41	238.41
	-	852.41								M5	52.2 (5.9)	0.16 (4.0)		
50	850.50	-	1.97 (50.0)	2.35 (59.6)	0.81 (20.6)	0.81 (20.6)	1.0 (25.4)	17368	510	M8	79.7 (9.0)	0.16 (4.0)	236.50	N/A
	-	852.50								M6	86.7 (9.8)	0.20 (5.0)		

PERFORMANCE (AT 20°C WITH STANDARD ACETAL DISC)

Coupling Size	⑤ Peak torque lbs.-in. (Nm)	⑥ Max compensation @ 3000 rpm			⑦ Torsional		Static break torque lbs.-in. (Nm)
		Angular deg	Radial in. (mm)	Axial in. (± mm)	Rate deg / Nm	Stiffness Nm / rad	
13	4.43 (0.5)	0.5	.004 (0.1)	.002 (0.05)	0.88	65	35.4 (4)
19	15.0 (1.7)		.008 (0.2)	.004 (0.1)	0.50	115	70.1 (8)
25	35.4 (4)		.008 (0.2)	.004 (0.1)	0.28	205	115 (13)
33	79.7 (9)		.008 (0.2)	.006 (0.15)	0.093	615	469 (53)
41	151 (17)		.01 (0.25)	.006 (0.15)	0.048	1200	504 (57)
50	266 (30)		.01 (0.25)	.008 (0.2)	0.042	1375	841 (95)

Materials Finishes

Hubs: Stainless Steel 303 S31
- Natural Finish

Fasteners: Stainless Steel

IMPORTANT

Load capacity depends on application conditions:
see page 4 for details

STANDARD BORES® FOR ALL TYPES

Sizes indicated in parenthesis are metric (mm).

Coupling Size	ØB1, ØB2 +0.0012/ -0 (+0.03mm/-0mm)																								
	(2)	(3)	1/8"	(4)	3/16"	(5)	(6)	1/4"	(8)	3/8"	(10)	(12)	1/2"	(14)	(15)	5/8"	(16)	(18)	(19)	3/4"	(20)	(24)	(25)	(30)	
13		•	•		•	•	•	•																	
19				•	•	•	•	•																	
25						•	•	•	•	•	•	•													
33							•	•	•	•	•	•	•	•	•	•	•								
41									•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
50										•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Bore ref.	11	14	16	18	19	20	22	24	28	31	32	35	36	38	40	41	42	45	46	47	48	51	52	56	